

## NEWS2 escalation of deteriorating patients in ED

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**Background:** Emergency department (ED) crowding, prolonged length of stay, and delayed transfer of care increase the risk of delayed recognition of clinical deterioration. At Royal Derby Hospital ED, delays and inconsistency in escalation after abnormal National Early Warning Score 2 (NEWS2) observations were identified as a patient safety issue. A sentinel event involving a patient with viral myocarditis, in which delayed escalation contributed to a fatal outcome, prompted this quality improvement project (QIP). Although trust-wide escalation guidance existed, adherence within the ED was inconsistent, and processes did not adequately reflect the ED workflow.

**Aim:** To improve compliance with timely escalation and response for deteriorating adult patients in the ED from 56% to 80% within 6 months by standardising escalation pathways and embedding reliable NEWS2-aligned processes.

**Methods:** A multidisciplinary QI team was established, including ED consultants, registrars, nursing staff, healthcare assistants (HCAs), junior doctors, and digital transformation colleagues. The project used Plan-Do-Study-Act (PDSA) methodology across multiple cycles, supported by structured QI methods and staff engagement. Interventions were co-designed with frontline staff to address practical barriers and reduce variation between work-as-prescribed and work-as-done. Key interventions included bedside digital entry of observations using Nervecentre devices, mandatory registered nurse (RN) sign-off for abnormal NEWS2 scores, clearer identification of senior decision makers through ED whiteboards, structured prompts for clinician documentation, morbidity and mortality teaching using a real ED case, and implementation of a simplified ED-specific escalation flowchart aligned with workflow. Four process measures were tracked: timely escalation following HCA observations, RN response to escalations, escalation to a clinician or senior decision maker, and clinician assessment and documentation following escalation.

**Results:** Improvements were seen across all key escalation steps. Timely escalation following HCA observations improved from 56% to 68%. RN response improved from 61% to 74%. Escalation to a clinician or senior decision maker improved from 52% to 70%. Clinician assessment and documentation improved from 59% to 62% and remained a persistent challenge.

**Conclusion:** An ED-specific NEWS2 escalation algorithm, supported by digital observation systems and multidisciplinary engagement, improved escalation and response to deterioration in a pressured ED environment. Clinician documentation remained inconsistent and requires further targeted work.

**Keywords:** NEWS2, Emergency Department, deterioration, escalation, patient safety, quality improvement, PDSA, digital observations, Nervecentre, clinical governance.

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